

SECRET

SAPC- 19912
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Dear Sid:

Pursuant to our recent discussions it is requested that you permit us to borrow one transistorized System 1.

We understand that the Contractor will complete your entire order by approximately 1 November, delivering at the rate of 5 per week.

Very truly yours,

Dan

PS/DCI []:pf (10/1/57)

Distribution:

- Orig - [], FOG
- ✓ 2 - A-101 - a + 9
- 3 - Dir. of Mat. (Proj.)
- 4 - Proj. Comp.
- 5 - Proj. Commo
- 6 - []
- 7 - Proj. Chrono

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SECRET

SAPC-19684
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24 September 1957

MEMORANDUM FOR: Project Director

SUBJECT : An Improved System I (System VI)

REFERENCE : A/EBO Memo to Project Director dated 29 September 1957
Subject: Report of Trip to R-W, 18 September 1957
(SAPC-19621)

1. In response to your suggestion to utilize the space vacated in the nose of the U-2 by the withdrawal of System III, I propose an improved System I, described below, which I am referring to as System VI. For a total weight of approximately the same as our present Systems I and III (less the weight of the 400 cycle generator and drive-ring), we can have a system similar to System V covering 50 Mc/s to 11KMc/s. The System will cover all the frequencies of System V plus 50-150 Mc/s - in four bands, however, instead of ten. Antenna developments made during the development of Systems I, III and IV make this possible for the first time in the history of ELINT. The loss resulting from a reduction from ten to four bands will lose some frequency information. However, filters now exist in System I components whereby on succeeding flights the four bands may be further refined with frequency resolution into the ten bands of System V by frequency band-width reduction and/or time-sharing.

2. The System will have greater sensitivity than System V. Developments during the AQUATONE Project now make it possible to increase crystal-video sensitivities by 25 to 50 db (25 to 150 times increase in range) by using the technique of the Rambo preamplifier. This technique will be used on all bands.

3. The antenna system will suffer a loss of some 20 db (ten times in range) throughout most of the frequency coverage unless more antenna window space can be provided. It is recommended that additional window area be considered for antenna mounting. Windows in the removable side hatches and/or the nose cone are needed. By this means, we can retain antenna gains commensurate with those of System I.

4. It is recommended that four System I transistorized amplifiers (subject to tests on the new R-W amplifier) and four System I recorders (two more than currently in use, per vehicle) be used per system. Antennas from System I would be provided primarily from R-W productions now in progress with some possible modification to fit space and windows. ☐ of R-W has done excellent antenna work in the past. ☐

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SUBJECT: An Improved System I (System VI)

5. It is recommended that [redacted] provide, with guidance from [redacted], the R.F. preamplifiers for the system. [redacted] has the competence for the job and would like to do it. They have demonstrated a competence considerably beyond that demonstrated by R-W for this type of work.

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[redacted]
Acting ELINT Staff Officer

Distribution:

Copy 1 - Project Director

- 2 - [redacted]
- 3 - [redacted]
- 4 - [redacted]
- 5 and 6 - ESO
- 7 - Project Chrono

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